DAMATROL MC512 H   multifunction controller

DAMATROL MC512 H is a digital multifunction controller which permits all basic controller configurations such as PID, cascade and ratio control.

DAMATROL MC512 H can be configured either through its Panel Board with pre-programmed standard options, or with a PC and software using functional blocks.

TECHNICAL SPECIFICATIONS

Ambient requirements
- operating temperature: 0 to +50 °C
- storage temperature: -40 to +80 °C
- relative humidity: max. 80 %
- vibration: max. 1.3 mmpp, 5-14 Hz, 0.5 g, 14-150 Hz

Enclosure class
- panel-type enclosure: front IP40, rear IP40
- field-type enclosure: IP65

Dimensions
Panel-type enclosure
- weight: approx. 2.7 kg
- outside dimensions:
-- width: 72 mm
-- height: 144 mm
-- length: 430 mm (without display unit: 395 mm)
- panel cut-out: 68 x 138 mm
-- with mounting collar: 3" x 6" (US std.)
Field-type enclosure
- weight: approx. 3 kg (one controller)
- outside dimensions
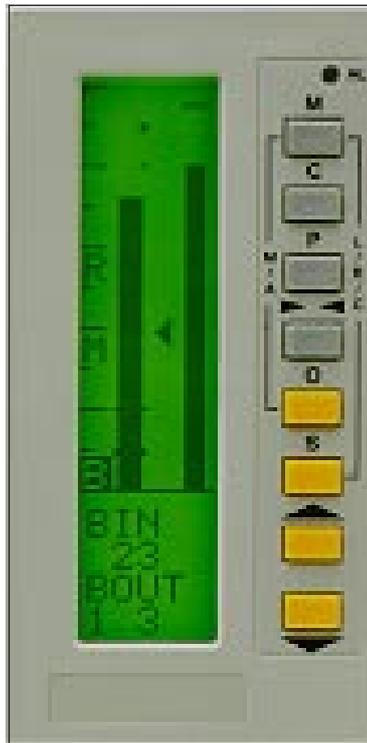-- width: 310 mm
-- height: 192 mm
-- depth: 270 mm

Power supply
- 230 V (-15 %...+10 %) 50/60 Hz
- 115 V (-15 %...+10 %) 50/60 Hz
- 20...40 V DC
- power consumption: max. 20 W

Power failure features
Preservation of data in memory
- all data: 24 h (e.g. signal values, trends)
- parameters, calibration and configuration: 10 years
Running mode after power failure is selectable by the user.

Analog connections
- common ground potential for analog inputs and outputs
- calibration through 0-20 mA (0-5 V) range; min. span 2 mA; standard calibration 4-20 mA
- resolution: 12 bits
- accuracy: ±0.1 % of standard span

4 analog inputs
- current input impedance: 250 Ω
- voltage input impedance: 0.5 MΩ

2 analog outputs

Hart connection
Front-access port for transmitters that communicate via HART, Highway Addressable Remote Transducer, protocol

4 binary inputs
- common ground potential for binary inputs
- input impedance: 10 MΩ
- input signal: make-contact 24 VDC

4 binary outputs
- relay outputs
  - voltage max. 30 V
  - current max. 200 mA
  (max. values for resistive load)
- voltage free contact

4 transmitter supplies
- min. 24 V, 20 mA, short-circuit protected
- current limit: 24 mA

DAMATROL MC512 H   XXXX

Enclosure versions
E = Panel
F = Field
R = 19" rack

Supply voltage
1 = 230 V AC, +24 V DC
2 = 115 V AC, +24 V DC

Software
N   = fixed conf. C1
P   = PC conf.

Bus
C = no
L = yes

Code example:
DAMATROL MC512 H E 1 P L

DOCUMENTS
- CC804TEC for C1 fixed conf.
- CC804M, conf. sheet for C1
- CC804PCTEC for PC conf.

Configuration

Fixed configuration (C1)
- 3 controller loops
- 6 measurement and calculation loops (counters, min, max, +, -, x, /, $\sqrt{}$, lin etc.)
- 4 binary logic loops (AND, OR, XOR)
- displays: 3 controller, 2 measurement, 1 four-column and 21 trends
- back up

PC configuration
- 80 different functional blocks
- 255 functional blocks per application
- 16 displays, 8 different types plus text and motor control display
- sequence of display pages/types is selectable
- back up

Buses
- internal bus: up to 15 Damatrol MC512 controllers
- PC bus: up to 15 Damatrol MC512 controllers; 1-4 buses/PC
- RS485 hardware
- Modicon Modbus RTU software
- baud rate: selectable, max. 38 kB

We reserve the right to make technical changes without prior notice.

I/O Expansion units
for DAMATROL MC512 H

I/O expansion units are used to increase the number of standard DAMATROL controller's I/O connections. With expansion units the controller's standard I/O is multiplexed to max. four expansion I/Os. If required, several expansion units can be connected to a single controller. Up to 7 units can be connected to provide a maximum of 16 analog inputs, 8 analog outputs, 16 binary inputs and 8 binary outputs. The update interval of the I/Os will then be increased from the normal 100 ms to 400 ms. All I/O expansion units use external 24 VDC (-10% +20%) supply.
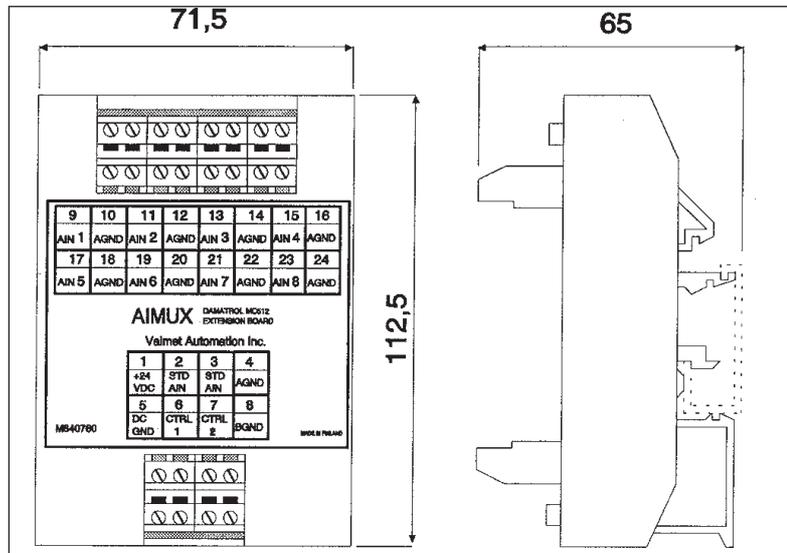
TECHNICAL SPECIFICATIONS

Construction
- Plastic base with terminal-block connections
- Metal cover

Operating temperature
- 0 to 50°C

Enclosure class: IP30

Installation
- On mounting rail TS35 DIN46277, BL1, 2 or 3.
- Recommended maximum distance from DAMATROL less than 5 m

Control
- DAMATROL's standard outputs BOUT3 and BOUT4 are used for control

NOTE!
Expansion units can only be used with DAMATROL MC512 H PC version.

Features

AIMUX
- Input resistance: 272R ±2 %
- Resolution: 12 bit
- Channel-specific calibration
- Accuracy for calibrated channel: ±0.15 % F.S.
- Difference between channels connected to same input: max. 0.5 %
- Thermal drift: ±0.05%/10°C F.S. (not including DAMATROL)
- Current consumption: max. 75 mA, not including AIN signal currents

BIMUX
- Binary inputs are grounded and electrically isolated from analog signals
- Switch's leakage current can be max. 1 mA, minimum voltage capacity 30 V, and minimum current capacity 15 mA
- Unconnected input is read as zero
- Current consumption: max. 100 mA

AOMUX
- Resolution: 12 bit
- Channel-specific calibration
- Accuracy for calibrated channel: ±0.15 % F.S.
- Difference between channels connected to same output: max. 1.5 %
- Thermal drift: ±0.05%/10°C F.S. (not including DAMATROL)
- Current consumption: 50 mA

BOMUX
- Relay's normally-open contact as output
- Open contact corresponds to the "0" state
- Without power supply the state of the outputs is "0"
- In undervoltage conditions, or when DAMATROL control is off, the outputs will go to "0" state after approx. 1.6 s

Performance specifications for resistive load:
- Maximum current: 100 mA
- Maximum voltage: 30 V
- Insulation voltage: 1000 VAC RMS
- Switch resistance: max. 0.2 Ω
- Current consumption: 200 mA